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Soviet arsenal 'made in U.S.'

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WASHINGTON—Through theft, blackmail, and bribery—with an assist from American businessmen eager to make a profit—Soviet agents have obtained enough U.S. high technology to vastly expand their military might—at U.S. expense.

That is the view of many ranking members of the U.S. intelligence community, who say that the Soviet technology-gathering operation is costing American taxpayers billions. Much of the current \$189-billion U.S. defense budget is needed to counter Soviet muscle acquired directly through American technology, they add.

Sophisticated U.S. technology is reaching the Soviet armed forces nearly as fast as it is being acquired by U.S. units, say a number of top officials—speaking, sometimes on the record and sometimes off.

As a result, Senate Banking Committee Chairman Jake Garn (R., Utah) and others warn, the U.S. must spend billions to counter Soviet military might born of U.S. technology.

THE MOST STARTLING—and dismaying—example to Garn is the discovery that nearly all the engineering breakthroughs in the Soviet SS-18 nuclear missile, which makes it accurate enough to imperil all 1,000 American Minuteman ICBM silos in a first strike, are a direct result of buying and stealing U.S. technology.

The SS-18, which carries up to 10 multiple independently targetable nuclear warheads (MIRVs), is guided by a computer "reverse engineered" from a

sophisticated Hewlett-Packard model len by Soviet agents at a 1972 Swiss trade show.

The extremely accurate inertial guidance system—which allows Soviet missile crews to lob their warheads "down the stovepipe" of U.S. silos—is made possible by American ballbearing technology. Soviet engineers now use machines called Centalign B, bought from a New England firm under a Department of Commerce license, to grind bearings with a degree of precision offered by no other machine. The license was granted despite intelligence community warnings.

A military analyst disclosed that the SS-18 guidance systems use an on-board laser measuring device acquired in California by a KGB (Soviet intelligence) operation coordinated out of the Soviet trade consulate in San Francisco.

DR. MILES COSTICK, president of the Institute on Strategic Trade here and a frequent debriefer of Iron Curtain defectors, said Russian engineers have told him in interviews that they observed bearings from the Centalign B machines being installed in the SS-18s.

In a 1980 report to the Banking Committee, Garn called the sale of the precision grinders "ill advised" and noted: "The first immediate effect of increased Soviet MIRV accuracy on the American people is the need to build and deploy the MX ICBM, which will cost over \$30 billion in constant (1980) dollars."

Since then the Congressional Budget Office has estimated that the MX missile will cost \$40 billion.

The SS-18 appears to be the costliest loss to U.S. interests, but it is far from the only case in which an ambitious and often illegal KGB operation has sapped American companies, scientists, and businessmen of technology far more sophisticated than what is available inside the Soviet bloc.

ton exported seismographic equipment used for exploration of underground oil and gas to the Soviets without obtaining proper licenses. The computerized sensing equipment was adapted by the Soviets for use aboard Russian naval vessels, where it can detect a U.S. submarine as easily as it can a Texas gas deposit.

Walter and Frances Spawr, a couple who operated a Corona, Cal., optical research company, were indicted late last year for deliberately exporting sophisticated copper-plated, water-cooled laser mirrors to the Soviets. A high Commerce Department source said in an interview that the CIA has found that the laser mirrors are being tested in the Soviet hunter-killer satellite program.

In August FBI agents posing as Soviet officials arrested Marc Andre DeGeyter of Alexandria, Va., as he tried to sell computer tapes produced by American defense contractors for \$500,000. The tapes contained the design for building a "super chip" technology that could be used to inventory an entire army or guide terrain-hugging Cruise missiles over Soviet territory.

Federal agents found a \$450,000 letter of credit in DeGeyter's briefcase guaranteed by Techmashimport, a Soviet state trading company, law enforcement sources said.

U.S. officials have concluded that in the last 18 months the Soviets have gained the capacity to build microcomputer chips such as those made in California's "Silicon Valley," south of San Francisco, which has become the world's leading research and development center for solid state electronics. The machines to build the components were shipped to Russia by an American company, L.I. Industries, in boxes labeled "air-conditioners" and "washing machines."

Experts who discussed the technology drain in interviews told of a decade-long

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For years, American know-how and equipment have contributed to Soviet military might. This is the first of a three-part series examining how the Russian military has taken advantage of U.S. technology.